

ABSTRACT

A fuel cell electrical power generation system (1) is provided which is made up of components including a desulfurizer (3), a prereformer (5), an internal reforming type solid electrolyte fuel cell (7) etc. The fuel cell (7) is made up of components including an air electrode (31), an electrolyte (33), a fuel electrode (35), an air chamber (37), a fuel chamber (39), external circuits etc. The prereformer (5) operates as follows. After being flowed through the desulfurizer (3), the town gas/air is flowed through the prereformer (5) during the startup phase of the internal reforming type solid electrolyte fuel cell (7), thereby to cause partial oxidation of hydrocarbons present in the town gas to generate a partial oxidation gas which contains CO and H₂. This partial oxidation gas is supplied to the fuel chamber (39).